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ioimage by dvtel

trk1 Installation Manual

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Ver. A1 April 2013

Table of Contents

1 Document Information iii

2 Introduction 1

2.1 Items Included in the Package 2

2.2 Hardware Description 2

2.2.1 Power Connection Panel 2

2.2.2 Video Connection Panel 3

3 Installing and Connecting the Unit 5

3.1 Installing the Unit 5

3.1.1 Assembling the Unit in a Rack Mount Panel (Optional Accessory) 6

3.2 Connecting the Unit 8

3.2.1 Grounding the Unit 8

3.2.2 Connecting the Unit to the Power Supply 8

3.2.3 Connecting the Unit to the Network 9

3.2.4 Connecting the Video Source (Camera) to the Unit 10

3.2.5 Connecting the Analog Video Output to an Analog Device 10

3.2.6 Connecting the Unit to Receive Alarms from External Devices (Alarm Inputs) 11

3.2.7 Connecting the Unit to Control an External Device (Using Relay Outputs) 11

3.3 Resetting the Unit 13

3.3.1 Reset Using the Reset Button 13

3.3.2 Reset by Removing the Power Supply 13

3.4 Solo Setup 13

Appendix 15

A.1. Technical Specifications 16

A.2. Connecting Leads to a Spring Clamp Terminal Block 18

A.3. Solo Setup Window 19

A.4. Troubleshooting 21

Contacting DVTEL 24

List of Figures

Figure 1: trk1 Unit 1
Figure 2: trk1 Unit Connectivity 1
Figure 3: trk1 Power Connection Panel 2
Figure 4: trk1 Video Connection Panel 3
Figure 5: trk1 with Nuts Removed 6
Figure 6: Inserting Units into Rack Mount Panel 6
Figure 7: Unit Secured to Rack Mount Panel 7
Figure 8: Rack Mount Assembly with Eight Units 7
Figure 9: Configurator Window 10
Figure 10: Relay Contacts 12
Figure 11: Spring Clamp Terminal Block 18
Figure 12: Connecting a Wire to a Terminal Block 18
Figure 13: Solo Setup Window 19

1 Document Information

Document Scope and Purpose

The purpose of this document is to provide instructions and installation procedures for physically connecting the trk1 encoder. After completing the physical installation, additional setup and configurations are required before video analysis and detection can commence.

For information on the unit setup and configuration, refer to the *HTML Edition Units User's Guide*.

Note:

This document is intended for use by technical users who have a basic understanding of CCTV camera/video equipment and LAN/WAN network connections.

Warning:

Installation must follow safety, standards, and electrical codes as well as the laws that apply where the units are being installed.

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Document Conventions

WARNING and **CAUTION** notes are distributed throughout this document, whenever applicable, to alert you of potentially hazardous situations. These may be hazards associated with a task or a procedure you are carrying out or are about to carry out.

The following document conventions are used throughout this manual:

A **Warning** is a precautionary message that indicates a procedure or condition where there are potential hazards of personal injury or death.

A **Caution** is a precautionary message that indicates a procedure or condition where there are potential hazards of permanent damage to the equipment and or loss of data.

A **Note** is useful information to prevent problems, help with successful installation, or to provide additional understanding of the products and installation.

A **Tip** is information and best practices that are useful or provide some benefit for installation and use of ioimage products.

General Cautions and Warnings

This section contains information that indicates a procedure or condition where there are potential hazards. These may be hazards associated with a task or procedure a user is carrying out or about to carry out. WARNINGS and CAUTIONS are distributed throughout this document, whenever applicable, to alert the user of potentially hazardous situations.

SAVE ALL SAFETY AND OPERATING INSTRUCTIONS FOR FUTURE USE.

Although the unit is designed and manufactured in compliance with all applicable safety standards, certain hazards are present during the installation of this equipment.

To help ensure safety and to help reduce risk of injury or damage, observe the following:

Warning:

1. Only qualified trained personnel should service and repair this equipment.
2. Observe local codes and laws and ensure that installation and operation are in accordance with fire, security and safety standards.

Electrical Safety Notice and Warnings

Warning:

1. Read the installation instructions before you connect the unit to a power source.
2. Electrical safety should always be observed. All electrical connections must be performed by a certified electrician.
3. Use the supplied power supply and protect against static electricity, ground faults and power surges.
4. The unit uses a three-wire power cord to make sure that the product is properly grounded when in use. The plug on this cord will only fit into a grounding-type outlet. This is a safety feature. If the intended power outlet does not support three prongs, one of which is a ground, contact an electrician to install the appropriate outlet. NEVER remove or otherwise attempt to bypass the ground pin of the power cord. Do not operate the unit in the absence of a suitably installed ground conductor.
5. If you use an extension cord with this system, make sure that the total ampere rating on the products plugged into the extension cord does not exceed the extension cord ampere rating.
6. To avoid possible shock hazards or damaging the unit, assure that the positive and negative of the power leads are properly connected to the terminal block connector before plugging it into the unit or turning on the power source.
7. In the following situations, the electric power should be turned off immediately and appropriate repairs, replacements or remedies should be taken if:
   - The power line or plug is damaged, frayed or shows heavy wear.
   - The unit has been physically crushed or deformed.
   - The unit has been exposed to water.
   - The unit has been exposed to, or shows signs of damage from, fire, intense heat, heavy smoke, fumes, or vapors.
   - Electrical connections of the unit become abnormally hot or generate smoke.
   - The unit has been dropped, damaged or shows signs of loose internal parts.
   - The unit does not operate properly.

Caution:
To avoid damage from overheating or unit failure, assure that there is sufficient temperature regulation to support the unit's requirements. Operating temperature should be kept in the range 0° to 50°C (32° to 122°F), with no more than 95% non-condensing humidity.

Minimizing EMI and RFI

When wires run for a significant distance in an electromagnetic field, electromagnetic interference (EMI) can occur. Strong EMI (e.g. lightning or radio transmitters) can destroy the units and can pose an electrical hazard by conducting power through lines and into the system. Poor quality or worn wiring can result in radio frequency interference (RFI). To minimize the effects of EMI and RFI, consult your reseller.

Site Preparation

There are several requirements that should be properly addressed prior to installation at the site. The following specifications are requirements for proper installation and operation of the unit:

- **Ambient Environment Conditions**: Avoid positioning the unit near heaters or heating system outputs. Avoid exposure to direct sunlight. Use proper maintenance to ensure that the unit is free from dust, dirt, smoke, particles, chemicals, smoke, water or water condensation, and exposure to EMI.
- **Accessibility**: The location used should allow easy access to unit connections and cables.
- **Safety**: Cables and electrical cords should be routed in a manner that prevents safety hazards, such as from tripping, wire fraying, overheating, etc. Ensure that nothing rests on the unit's cables or power cords.
- **Ample Air Circulation**: Leave enough space around the unit to allow free air circulation.
- **Cabling Considerations**: Units should be placed in locations that are optimal for the type of video cabling used between the unit and the cameras and external devices. Using a cable longer than the manufacturer's specifications for optimal video signal may result in degradation of color and video parameters.
- **Physical Security**: The unit provides threat detection for physical security systems. In order to ensure that the unit cannot be disabled or tampered with, the system should be installed with security measures regarding physical access by trusted and un-trusted parties.
- **Network Security**: The unit transmits over IP to security personnel for video surveillance. Proper network security measures should be in place to assure networks remain operating and free from malicious interference. The unit is intended for installation on the backbone of a trusted network.
- **Electrostatic Safeguards**: The unit as well as other equipment connected to it (relay outputs, alarm inputs, racks, carpeting, etc) shall be properly grounded to prevent electrostatic discharge.

The physical installation of the unit is the first phase of making the unit operational in a security plan. The goal is to physically place the unit, connect it to other devices in the system, and to establish network connectivity. When finished with the physical installation, refer to the *HTML Edition Units User's Guide* to complete the second phase of installation, which is the setup and configuration of the unit.

2 Introduction

The trk1 is a self-contained video analytic IP encoder that monitors the video input from a camera, providing real-time detection and autonomous tracking capabilities. Operators can define rules, perimeter lines, sterile zones and other criteria for intrusion detection. In addition to its analytic capabilities, the encoder also transforms the input video into a standards-compliant, compressed IP video stream.

Figure 1: trk1 Unit

The unit analyzes the captured video signal, generates alarms, and notifies operators of the presence of people, vehicles or objects. It can stop and detect events in multiple preset zones. Users can define the events and location in the video of the image that can be detected with user-customizable rules and positioning criteria.

The camera simultaneously provides video output in two formats: analog video and compressed digital video over IP. On-screen overlays indicate where the detection has occurred on the video output.

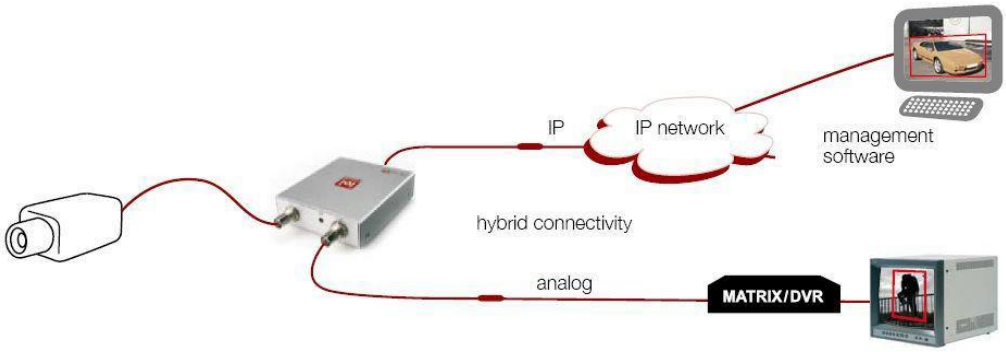

Figure 2: trk1 Unit Connectivity

This chapter includes the following sections:

- Items Included in the Package (page 2)
- Hardware Description (page 2)

2.1 Items Included in the Package

The unit package contains the following items:

QTY	Description
1	trk1 encoder
1	AC adaptor with power cord
2	Terminal block spring clamp connectors
1	Documentation and utilities CD

Related Documentation:

- *HTML Edition Units User's Guide*
- *ioi Product Selection Matrix*

2.2 Hardware Description

This section describes the connection panels of the unit.

2.2.1 Power Connection Panel

The following is a description of the power connection panel of the unit.

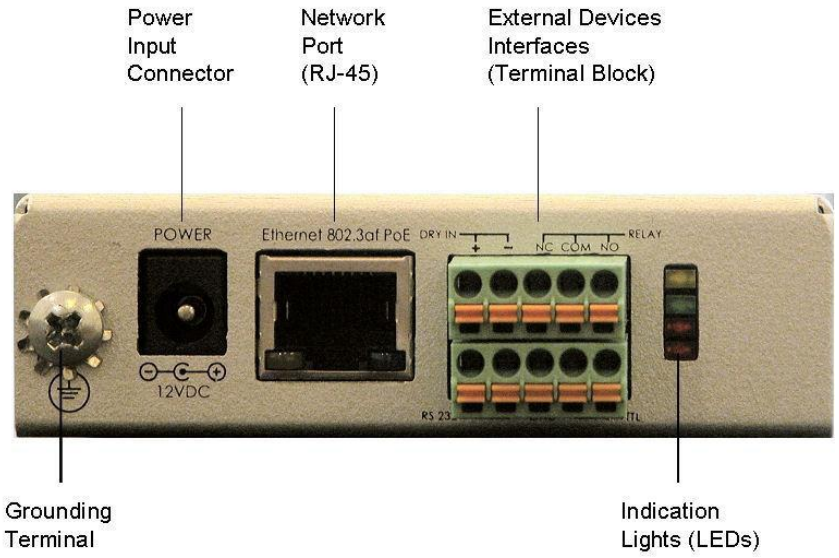

Figure 3: trk1 Power Connection Panel

The power connection panel of the unit includes the following items:

Item	Description
Grounding Terminal	For connecting the unit to the protective ground (earth) according to local regulations and codes. For more information, see Grounding the Unit (page 8).
POWER Input	For powering the unit from a 12VDC power source.

Item	Description
Ethernet 802.3af PoE Network Port (RJ-45)	For connecting the unit to the Ethernet network (10/100 Mbps) and powering the unit via PoE.
External Devices Connection	Terminal block for the following connections: • DRY IN (Alarm Input): Single alarm input connection (a set of two wires) from an external device — for example, a fire sensor, PIR (passive infrared sensor, fence sensor, etc.) with a dry contact output to the terminal block. • RELAY (Relay Output): Output signal (opto-isolated) for a single external device, such as an electrical door lock. o NO: Terminal for NORMALLY OPEN configurations o COM: Terminal for COMMON wire configurations for either NC or NO o NC: Terminal for NORMALLY CLOSED configurations • RS232: Not in use. • Ground: Additional ground connection. • RS485: Not in use.
Indication Light (LED)	Not in use.

2.2.2 Video Connection Panel

The following is a description of the video connection panel of the unit.

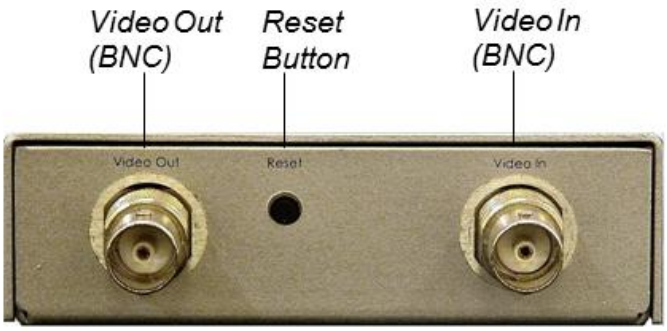

Figure 4: trk1 Video Connection Panel

The video connection panel of the unit includes the following items:

Item	Description
Video In (BNC)	Input interface for receiving the surveillance camera analog video signal (source) for analysis and detection.
Video Out (BNC)	Output interface that provides the PAL or NTSC analog video signal after analysis and includes detection overlays and additional On-Screen Display (OSD) information. Typically connected to analog video equipment such as analog video displays or an analog video recording device or a digital video recorder (DVR). **Note:** In order to view analog video, analog video out must be enabled in the unit settings (disabled by default). For more information on how to enable the analog video out signal, refer to the *HTML Edition Units User's Guide*.
Reset Button	For resetting the unit to its previous settings.

3 Installing and Connecting the Unit

This section describes how to install and connect the unit and includes the following sections:

- Installing the Unit (page 5)
- Connecting the Unit (page 8)
- Resetting the Unit (page 13)

Note:

After connecting the unit, proceed to configure the unit as described in the *HTML Edition Units User's Guide*.

3.1 Installing the Unit

The unit can be installed and mounted next to the camera (inside the camera enclosure).

Alternatively, the unit can be installed inside an equipment room on a shelf or in a rack using the rack mount panel that is available as an optional accessory.

When installing the unit make sure that:

- It is securely tied down and cannot be easily dislodged
- Operating temperatures, at all times, are kept between the minimum/maximum allowed
- Proper ventilation is provided so that the air is free to circulate around the unit
- The unit is protected from direct weather conditions (for example, sunlight, rain, dust, and so on)

Caution:

To avoid damage from overheating or unit failure, do not block the vents of the unit, and ensure that there is sufficient temperature regulation to support the unit's cooling/heating requirements. Ambient operating temperature should be kept in the range 0°C to 50°C (32° to 122°F)), with no more than 95% non-condensing humidity.

3.1.1 Assembling the Unit in a Rack Mount Panel (Optional Accessory)

Up to 8 units can be mounted on a single rack mount panel. After the units have been assembled in the rack mount panel, the panel can be installed in a standard 19-inch rack.

To assemble units in a rack mount panel

1. Remove the nut and washer from each of the two video connectors on the video connection panel of the unit.

Figure 5: trk1 with Nuts Removed

2. Attach each unit to the rear side of the rack mount panel by inserting it through the holes as shown in Figure 6. Position each unit so that the **Reset** button is clearly visible through the **Reset** hole in the rack mount panel.

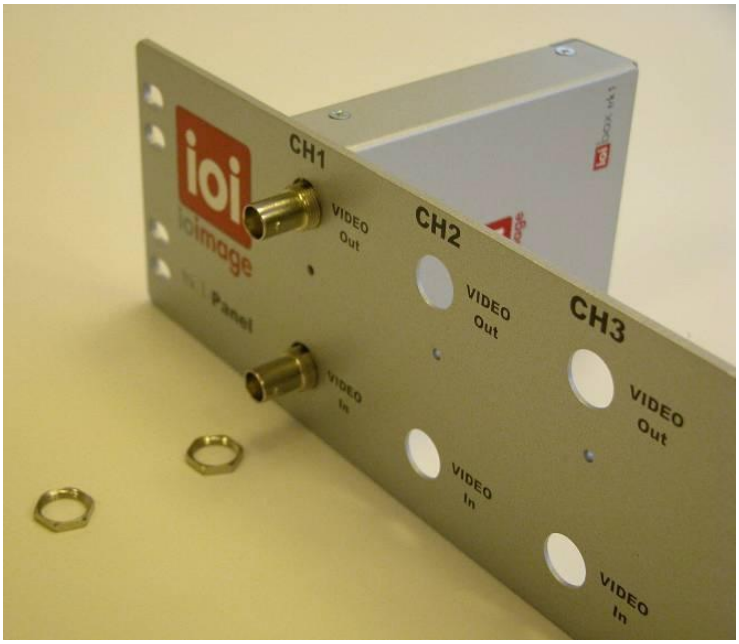

Figure 6: Inserting Units into Rack Mount Panel

3. Fasten each unit using the nuts and washers removed in step 1, making sure to first place the washer on each video connector before tightening the nut on the video connector.

Figure 7: Unit Secured to Rack Mount Panel

4. Repeat steps 1 through 3 for each of the units you want to assemble on the rack mount panel (up to 8 units can be assembled per panel).
5. The following is an example of the rack mount assembly holding eight units.

Figure 8: Rack Mount Assembly with Eight Units

6. Attach the rack mount panel to a 19" rack.

3.2 Connecting the Unit

This section describes the procedures for connecting the unit and includes the following sub-sections:

- Grounding the Unit (page 8)
- Connecting the Unit to the Power Supply (page 8)
- Connecting the Unit to the Network (page 9)
- Connecting the Video Source (Camera) to the Unit (page 10)
- Connecting the Analog Video Output to an Analog Device (page 10)
- Connecting the Unit to Receive Alarms from External Devices (Alarm Inputs) (page 11)
- Connecting the Unit to Control an External Device (Using Relay Outputs) (page 11)

3.2.1 Grounding the Unit

The unit must be grounded according to local regulations and codes.

To ground the unit

1. Loosen the screw of the grounding terminal located on the power connection panel of the unit. See Figure 3: trk1 Power Connection Panel.
2. Attach a properly rated ground cable. Make sure the ring/spade terminal of the grounding cable is between the toothed washers. Tighten the screw.
3. Ensure that the other end of the ground cable is connected to a protective earth according to local regulations and codes.

3.2.2 Connecting the Unit to the Power Supply

Before connecting to the power, please review the Electrical Safety Notice and Warnings (page v).

Use a 12VDC power supply to power the unit. Following are the recommended AC adaptor specifications:

- Power Adaptor Input: 110-240VAC, 47-63Hz, 1A
- Power Adaptor Output: 12VDC, 25W, 2A
- Polarity:

Warning:
To prevent bodily injury or damage to the unit, use only properly rated and approved power supplies and/or AC adaptors.

To power the unit using a power outlet

Warning:
Make sure that the power supply matches the required specifications. Electrical safety should always be observed.

1. Connect the AC adaptor output to the terminal block on the power connection panel of the unit.
2. Connect the AC adaptor to the power outlet.

Note:

It is also possible to utilize Power over Ethernet to power the unit via the network cable connection to the Ethernet 802.3af PoE port.

3.2.3 Connecting the Unit to the Network

By default the unit is shipped with the factory default IP address 192.168.123.10.

Caution:

Before connecting the unit to the network, set the unit IP address according to your specific network requirements to avoid address conflicts. Refer to the instructions in this section on how to change the unit's IP addresses.

If your network uses firewalls, you must configure them to support communication among the units and computers running the Internet browser used to connect to the unit's web interface.

Note:

Refer to the *HTML Edition Units User's Guide* for setting the unit IP address and required firewall settings.

To connect a unit to the network

1. Connect a PC/laptop directly to the unit using a network cable connected to the **Ethernet** port located on the front panel of the unit. See Figure 3: trk1 Power Connection Panel.
2. Change the IP address according to your specific requirements. See the following section.
3. Disconnect the unit from your PC/laptop.
4. Connect the unit to the system network as follows:
   a. Connect the network cable to the **Ethernet** port located on the front panel of the unit. See Figure 3: trk1 Power Connection Panel.
   b. Connect the other network cable end to the network switch/hub.

To change the unit's IP address

1. Insert the CD included in the package in your computer's disk drive.
2. Run the `configurator.exe` file by clicking on the icon. The Configurator application opens.
3. Select the unit by right-clicking on it.

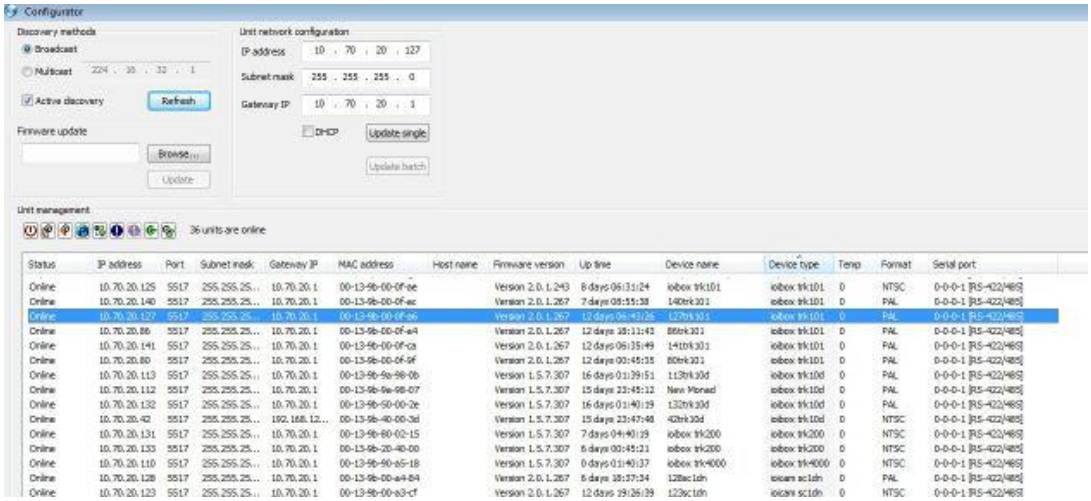

Figure 9: Configurator Window

4. In the Unit network configuration section, enter the IP address, Subnet mask, and Gateway IP address.

Note:

It is possible to set the IP address without changing the subnet.

5. If you will use a DHCP server, select the **DHCP** checkbox.
6. You may change the IP address for a single unit or multiple units.
   - To change the IP address for a single unit, select **Update single**. The IP address is changed.
   - To change the IP address for a number of units, enter the IP address of the first unit in the series. Then select **Update batch**. The IP addresses are changed.

Note:

The unit and the PC must be physically connected on the same network segment.

3.2.4 Connecting the Video Source (Camera) to the Unit

The unit accepts composite video (1Vp-p) from stationary analog cameras (standard, thermal, IR, and so on). Video connections should use a 75Ω cable and should not be longer than 30 meters (98 feet).

To connect a video source to the encoder

1. Securely connect the video cable connector (BNC) to the analog video output of the camera or video source.
2. Connect the other cable end (BNC) to the **Video In** connection on the video connection panel of the encoder (see Figure 4: trk1 Video Connection Panel).

3.2.5 Connecting the Analog Video Output to an Analog Device

Note:

The analog video output signal of the unit is disabled by default. Enable it if necessary via the unit's web interface.

The analog video output (composite video) contains the video from the camera combined with On-Screen Display (OSD) overlays such as detected objects, tracking boxes and trails, time stamp, alarm, camera status, and so on. These OSDs can be enabled and customized using the unit's embedded web interface.

The analog video output can be monitored using an analog monitor or recorded on a digital video recorder (DVR). For more information, refer to the *HTML Edition Units User's Guide*.

To connect the unit analog video output to an analog device

- Using video coax 75Ω cable with BNC connectors, connect the Video Out of the encoder to the analog device's video input (for example, the VIDEO IN of a monitor or DVR).

Note:

Make sure the encoder and the external analog equipment support the same video standard (PAL/NTSC).

3.2.6 Connecting the Unit to Receive Alarms from External Devices (Alarm Inputs)

The unit supports receiving alarms from external devices such as sensors and doors, enabling it to trigger automatic responses on the unit.

Warning:

Only dry contacts can be connected to the unit's alarm input terminals. An external device must fully close or fully open the circuit between the unit's alarm input terminals.

The unit supports a single alarm input from an external device. The alarm input includes two connecting terminals.

To connect an external alarm to the unit

Warning:

Disconnect power from the unit before performing the following procedure.

1. Connect the leads from the external device dry contact output using the spring clamp terminal block into the terminals marked - (Alarm In) and + (Alarm In). See Connecting Leads to a Spring Clamp Terminal Block (page 18). The two terminals are located at the bottom of the terminal block. See Figure 3: trk1 Power Connection Panel.
2. Connect the terminal block to the external devices connector on the power connection panel of the unit. See Figure 3: trk1 Power Connection Panel.
3. Connect the other end of the cable to the alarm out (dry contact) of the alarm device/sensor.

3.2.7 Connecting the Unit to Control an External Device (Using Relay Outputs)

The relay output of the unit provides an indication signal for controlling external devices, such as door locks and lights as a response to events and alerts. For more information on incident responses and relay outputs, refer to the *HTML Edition Units User's Guide*.

Relay Output Specifications

- Maximum current 1A @ 24VDC

Relay Contacts Schematic

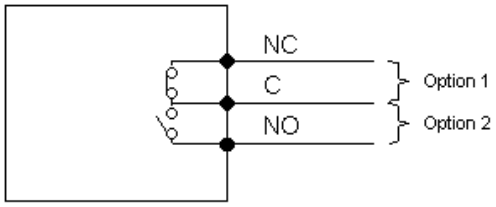

Figure 10: Relay Contacts

- **NC**: Terminal for connecting one of a pair of wires that leads to an external device on a circuit configured for NORMALLY CLOSED
- **C**: Terminal for connecting the second of a pair of wires for the COMMON lead of an external device regardless of whether the device is operated in a NORMALLY OPEN or NORMALLY CLOSED configuration
- **NO**: Terminal for connecting one of a pair of wires that leads to an external device on a circuit configured for NORMALLY OPEN

A relay output terminal has two options for connecting a device:

- Option 1: NORMALLY CLOSED configuration
- Option 2: NORMALLY OPEN configuration

The output supports opto-isolated signal for a single external device. Signals can be sent as continuous (ON/OFF) or single pulse of predefined duration.

To connect a device controller to a relay output of the unit

1. Connect the leads from the external device controller to the respective terminal points on the Spring Clamp Terminal Block according to your requirements (NORMALLY OPEN or NORMALLY CLOSED configuration). See Connecting Leads to a Spring Clamp Terminal Block (page 18). The three terminal points for the relay output are located on the top right of the terminal block. See Figure 3: trk1 Power Connection Panel.
2. Connect the terminal block to the external devices connector on the power connection panel of the unit. See Figure 3: trk1 Power Connection Panel.
3. Connect the other end of the cable to the external controller, which receives the signal from the unit and controls/powers the external device.

Warning:
The signal from the relay output of the unit must be used as an indicator and not for direct control of a device.

Caution:
To prevent damage to the unit, do not exceed the voltage and current ratings for the relay terminals.

3.3 Resetting the Unit

The unit can be reset as follows:

- Reset Using the Reset Button (page 13)
- Reset by Removing the Power Supply (page 13)

3.3.1 Reset Using the Reset Button

The unit has a reset button located on the power connection panel of the unit. See Figure 3: trk1 Power Connection Panel.

To reset a unit using the Reset button

1. Insert a small pointed object into the hole labeled **Reset** on the power connection panel of the unit.
2. Press in and release the button within 5 seconds. The unit resets with its previous settings.

3.3.2 Reset by Removing the Power Supply

The unit can be reset by turning off the power and then turning it on again.

To reset a unit by removing the power supply

1. Turn off or disconnect the power to the unit.
2. Turn on or reconnect the power to the unit. The unit restarts with the previous settings.

3.4 Solo Setup

The Solo Setup function enables you to install and setup a camera at the remote site without requiring another person's assistance. With this function, you can:

- Use the camera to record a set of snapshots of the scene while the user is moving around the camera field of view
- Move around within the camera's field of view
- Use the recording of his movement to setup the depth by marking his height on the camera's field of view

For instructions on how to use the Solo Setup, see page 19 in the Appendix.

Appendix

This section contains the following appendices:

- Technical Specifications (page 16)
- Connecting Leads to a Spring Clamp Terminal Block (page 18)
- Solo Setup (page 19)
- Troubleshooting (page 21)

A.1. Technical Specifications

Following are the trk1 technical specifications:

Video Input channels	
Number of Intelligent Video Analysis Channels	1
Analog Video Inputs	
Video Signal	Composite 1Vp-p (PAL or NTSC)
Physical Connector	1 x BNC 75Ω
Analog Video Outputs	
Video Signal	Composite 1Vp-p (PAL or NTSC)
Physical Connector	1 x BNC 75Ω
Digital Video Outputs	
IP Video Streaming	MPEG 4 SP, MJPEG
Maximum Resolution per Channel	CIF
Frame Rate	Up to full frame rate
Bit Rate	CBR (128Kbps – 4Mbps), VBR
Network	
Ethernet (IEEE 802.3/802.3U)	1 x Ethernet RJ-45 interface
Services and Protocols	TCP/IP, UDP/IP, HTTP, SMTP, DHCP, DNS, SNTP
Video Streaming	RTP/RTSP
Alarms/Commands	TCP/IP, HTTP
I/O Interface	
Serial - RS-232/RS-485	None
IN – Alarm Input	1 x dry contact
OUT – Relay Output	1 x relay output (rated load 1A @ 24VDC)
Power Source	
Voltage	12VDC
Power over Ethernet (IEEE 802.3af)	Supported
Power Consumption	5W

Physical Dimensions	
Dimensions (mm)	88 x 26 x 130 mm (W x H x D)
Dimensions (inches)	3-7/16” x 1” x 5-3/32” (W x H x D)
Mounting	Camera Housing/Shelf/Optional rack-mounting (multiple-unit accessory)
Environmental Specifications	
Operating Temperature	0° to 50°C (32° to 122°F)
Operating Humidity	5% to 95% (non-condensing)
Certifications	
Safety	UL, CE
Electromagnetic Interference (EMC)	FCC 47 CFR part 14, subpart B, Class A, CE Class A
Environmental	RoHS

A.2. Connecting Leads to a Spring Clamp Terminal Block

The unit is delivered with two terminal block connectors. The connectors enable you to connect wires for either the relay output or alarm inputs and then connect them to the unit.

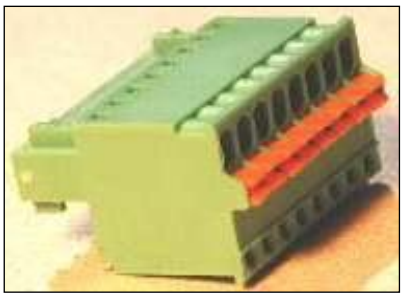

Figure 11: Spring Clamp Terminal Block

To connect a wire to the spring clamp terminal block:

1. Strip the insulation from the end of each wire that is to be connected to the terminal block. Approximately 1 cm (2.54”) of wire should be exposed.
2. With a small screwdriver, press in and hold the orange spring clamp button next to the female outlet where the wire will be inserted.
3. Insert the stripped end of the wire into the female outlet.
4. Release the orange spring clamp button.

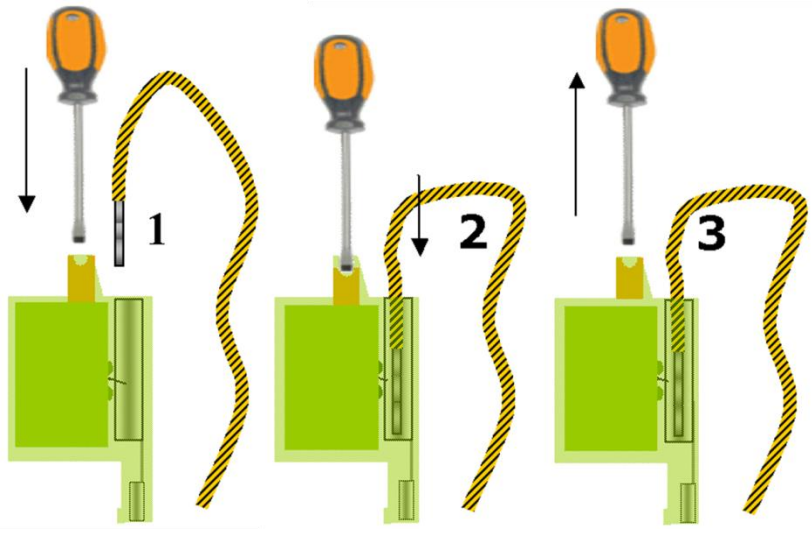

Figure 12: Connecting a Wire to a Terminal Block

A.3. Solo Setup Window

The Solo Setup function enables you to install and setup a camera without requiring another person's assistance.

To perform a Solo Setup

1. Open the **Setup > Analytics > Depth** window. The following screen is displayed:

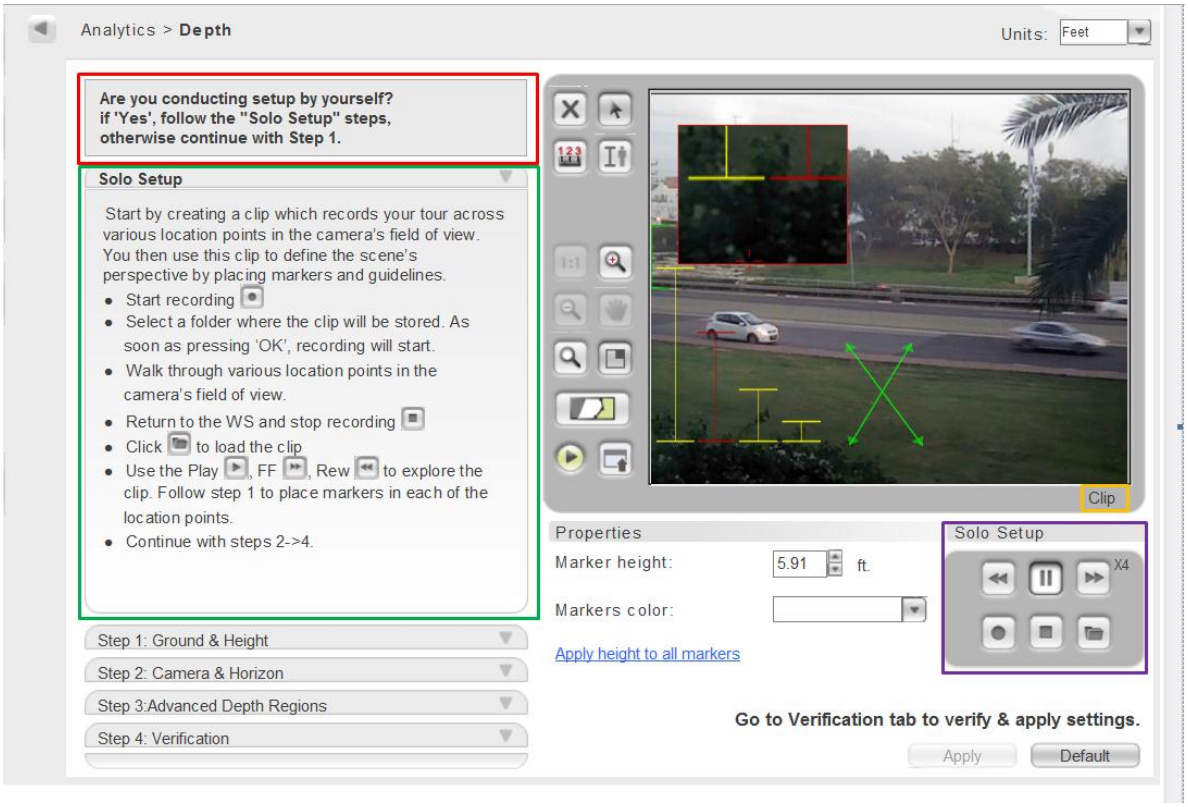
Analytics > Depth
Units: Feet
Are you conducting setup by yourself?
if 'Yes', follow the "Solo Setup" steps,
otherwise continue with Step 1.
Solo Setup
Start by creating a clip which records your tour across various location points in the camera's field of view. You then use this clip to define the scene's perspective by placing markers and guidelines.
Start recording
Select a folder where the clip will be stored. As soon as pressing 'OK', recording will start.
Walk through various location points in the camera's field of view.
Return to the WS and stop recording
Click to load the clip
Use the Play, FF, Rew to explore the clip. Follow step 1 to place markers in each of the location points.
Continue with steps 2->4.
Step 1: Ground & Height
Step 2: Camera & Horizon
Step 3:Advanced Depth Regions
Step 4: Verification
Clip
Properties
Marker height: 5.91 ft
Markers color:
Apply height to all markers
Solo Setup
X4
Go to Verification tab to verify & apply settings.
Apply
Default

Figure 13: Solo Setup Window

2. Open the **Solo Setup** tab. The following control icons are available on the Solo Setup keypad:

Icon	Function	Notes
	Start Recording	Starts recording and browses to destination folder where the clip will be saved
	Stop Recording	Stops recording
	Browse	Browses to the destination folder where clip is stored and loads the clip
	Play/Pause	Speed X1/X0
	Fast Forward	Speed X2, X4, X8, X16. Click to increase or decrease speed.
	Rewind	Speed -X2, -X4, -X8, -X16. Click to increase or decrease speed.

3. On the Solo Setup control keypad, click **Start Recording** to record a view in the camera's field of view.
4. Select a folder where to store the clip. Recording starts when the folder is selected.
5. Walk through various locations across the vertical axis of the camera's field of view in order to place ground and height markers and guidelines in the clip.
6. Press **Stop Recording**.
7. Proceed to the tab for **Step 1: Ground & Height**.

Note:

For detailed instructions how to set markers and guidelines, follow instructions in the *HTML Edition Units User's Guide*.

8. Click **Browse** to load the clip from the folder where it is saved.
9. Use the **Play**, **Pause**, **Fast Forward**, and **Rewind** buttons on the Solo Setup keypad to explore the clip. The status of the view is displayed on the bottom left side of the screen.
10. Exit Clip mode and return to *Live* mode by pressing the round **Play** button on the control panel located to the left of the monitor.

The caption under the monitor changes from *Clip* to *Live*.

11. Repeat steps 3-9 above for each preset.
12. Proceed to the tabs for Steps 2-4 of the Depth Setup to complete the setup and apply settings.

A.4. Troubleshooting

This section provides useful information and remedies for common situations where problems may be encountered.

Problem	Possible Solution
No network connection	**Hardware issues**: • Check that the network is working and the unit is powered on. • Check that the network (Ethernet) cable is properly attached to the unit. • Confirm that the LED on the Ethernet (RJ-45) connector on the power connection panel of the unit is on. • Confirm that the network cables are not damaged and replace if necessary. **IP Address issues**: • Change the default IP address/addresses of the unit. • From the PC running the web browser, ping the unit IP address and confirm that it can be reached. • Confirm that the network settings/firewalls are set according to the requirements.
How do I find the IP address of my unit?	The IP address can be set via the unit's Configurator application. See Connecting the Unit to the Network.
The IP address responds to a ping on the network from the workstation but does not show in the Configurator	Disconnect the unit's Ethernet 10/100 port or turn the power to unit off, and then ping the IP address again. If the IP address responds, there is another device using the IP address. Consult with your network administrator to resolve the conflict.
The unit IP address is in use by another computer (collision)	Change the unit IP address after connecting to it directly (not through the system network). See Connecting the Unit to the Network to set the IP address via the Configurator.
No analog output video signal	• Make sure the analog video out is enabled on the unit/channel. Refer to the *HTML Edition Units User's Guide* for details. • Check that the video cables are securely connected between the VIDEO OUT BNC connector of the unit and the analog video source. • Check that the connection is made to the correct VIDEO OUT connector of the analog video source. • Confirm that the camera has power. • Check the cables for damage and replace as needed.

Problem	Possible Solution
Bad output video quality	• Check the source video signal quality by connecting an analog monitor to the video source. If video quality is acceptable, connect video source to the unit. • Check that the cables are connected securely. This includes junction boxes and amplifier that may be used. • Check that the camera settings are correct on the camera and in the unit. Refer to the *HTML Edition Units User's Guide* for details. • Check that the camera lens is clean and unobstructed. • Check that the analog video signal is not being degraded due to impedance caused by lengthy or worn cable, numerous connectors, ground loops interference, and so on. • Check that the cable length is within specification.
Streaming video image is hanging (stopped)	• Confirm the unit's video streaming settings. Refer to the *HTML Edition Units User's Guide* for details. • Refresh your browser screen (F5). • Check that the bandwidth and bit rate settings of the network are set properly. • Check that other processes and applications are not causing undue latency. • Check that the firewall analysis or blocking is not interfering with the video stream and supports the required ports and communication protocols.
Alarm inputs are not working	• Check the unit settings to confirm that the alarm input is enabled. Refer to the *HTML Edition Units User's Guide* for details. • Check that a proper rule for an alarm input event has been defined in the unit. Refer to the *HTML Edition Units User's Guide* for details. • Check that the alarm input (dry contact close/open) is being provided by the connected device. • Check that the unit is communicating through the network. • Check that the alarm input wires are connected securely. • Check that the alarm wires are paired in the terminal block in the right positions and according to requirements.

Problem	Possible Solution
Relay outputs are not working	• Check the unit settings to confirm that the relay output is enabled. Refer to the *HTML Edition Units User's Guide* for details. • Check that a proper rule for activating a relay output has been defined in the unit or activate it manually. Refer to the *HTML Edition Units User's Guide* for details. • Check the relay output wires are connected securely. • Check that the relay output wires are paired in the terminal block according to requirements and that one wire is connected to the common. • Check that the NO or NC matches the system NORMALLY OPEN or NORMALLY CLOSED configuration.

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